Rivada Networks
1050 30th Street NW
Washington, DC 20007
Tel: +1 571 482 3326
Email: info@rivada.com

RIVADA

April 11, 2025

Marlene H. Dortch
Secretary
Federal Communications Commission
45 L Street NE
Washington, DC 20554
https://www.fcc.gov/ecfs/

Submitted Electronically Only

Re: *Reply Comments to IN RE: DELETE, DELETE, DELETE, GN Docket No. 25-144*

Dear Ms. Dortch,

These reply comments are respectfully submitted in response to the Commission's Public Notice (DA 25-219) seeking input on identifying FCC rules for the purpose of alleviating unnecessary regulatory burdens.

INTRODUCTION / SUMMARY

We strongly support the Commission's initiative to identify and eliminate regulations that are no longer necessary or that may stand in the way of deployment, expansion, competition, and technological innovation in communications. The first section of these comments identifies the specific regulatory provisions that should be deleted or revised in order to effectuate deregulation. The second section enumerates the substantial benefits and cost savings associated with the regulatory reform. The third section highlights technological and marketplace developments that make such reform imperative. The fourth section proposes a specific innovation that deregulation would enable. And the fifth and final section lists a few potential means to implement this deregulatory initiative.

The deregulation that we are proposing will unleash a watershed of innovation[1] that will benefit both incumbent businesses as well as new market entrants. Economic modeling that Rivada has

[1] *See, e.g., The Impact of Regulation on Innovation*, Philippe Aghion, Antonin Bergeaud, and John Van Reenen, National Bureau of Economic Research, Working Paper 28381 (demonstrating how overly regulated markets harm innovation): https://www.nber.org/papers/w28381

performed suggests that the introduction of open access wireless markets to the U.S. could increase the equity value of the incumbent carriers by up to 50%.[2]

As such, this reform embodies the FCC's charter to "promot[e] competition" and "innovation," and "encourag[e] the highest and best use of spectrum," as well as The Communications Act obligation to serve "the public interest, convenience, and necessity."

I. REGULATORY BARRIERS THAT SHOULD BE ELIMINATED

To increase competition and innovation in the wireless market, the Commission should remove or modify the following regulatory barriers:

A. *Spectrum Licensing and Assignment Rules*

1. Secondary Markets Rules (47 CFR §1.9001-1.9080)

Current secondary market rules focus primarily on long-term leasing arrangements and spectrum manager or de facto transfer leases. These rules create unnecessary friction in spectrum transactions and do not adequately support real-time capacity trading. Instead, secondary usage on a non-interference basis should be a matter of right. All licensees should be allowed to sublicense their spectrum for any use they would like on a secondary basis.

Recommended Action: The Commission should eliminate, or significantly relax, restrictions that prevent dynamic capacity trading by:

- **Deleting §1.9030(d) and §1.9035(d) requirements for prior Commission approval**
- **Modifying §1.9020 to expressly permit ISO-managed capacity markets**
- **Eliminating reporting requirements under §1.9060 for transactions conducted through a transparent open access market**

2. Competitive Bidding Procedures (47 CFR §1.2101-1.2114)

Current auction rules focus entirely on assigning exclusive spectrum rights to facilities-based providers. The nearly sole use of this approach limits market entry and reinforces highly concentrated market structures.

Recommended Action: The Commission should:

- **Modify §1.2101 to expressly permit reservation of spectrum blocks for open access networks**

---

[2] Rivada is prepared to share these models with the FCC or other interested parties upon request.

- **Delete portions of §1.2110(b)(3) that define eligibility in ways that exclude innovative service models**
- **Amend §1.2111 to facilitate contributions of spectrum to an open access network**

B. *Flexible Use Service Rules*

1. General Provisions (47 CFR §27.1-27.6)

Current service rules implicitly assume a vertically integrated business model in which the licensee is both the network operator and service provider.

Recommended Action: The Commission should:

- **Modify §27.2 to explicitly recognize separation of network operation from service provision**
- **Delete provisions in §27.3 that reference rules predicated on vertical integration**

2. Technical Rules (47 CFR §27.11-27.16)

Technical rules are currently designed solely around exclusive spectrum use rather than also permitting dynamic sharing.

Recommended Action: The Commission should:

- **Modify §27.11 to establish spectrum block sizes appropriate for pooled capacity markets**
- **Revise power limits in §27.50 to accommodate dynamic network management**
- **Delete unnecessary technical restrictions in §27.55-27.57 that impede dynamic spectrum use**

C. *Universal Service Reform*

1. High-Cost Support Mechanisms (47 CFR §54.309-54.316)

Current universal service rules direct billions of dollars to support inefficient, vertically integrated carriers in rural areas, rather than procuring capacity through least-cost solutions.

Recommended Action: The Commission should:

- **Modify §54.309 to permit competitive procurement of wholesale capacity**
- **Delete provisions in §54.310(c) that favor facilities-based providers**
- **Rewrite §54.313 reporting requirements to focus on capacity and performance rather than ownership**

2. Mobility Fund (47 CFR §54.1006-54.1010)

Current mobility fund rules entrench traditional carriers rather than promoting innovative solutions.

Recommended Action: The Commission should:

- **Delete restrictions in §54.1006(a)(1) that prevent shared infrastructure models**
- **Modify §54.1007 to support open access wireless networks in underserved areas**
- **Rewrite §54.1009 reporting requirements to accommodate wholesale capacity models**

E. *Roaming and Access Rules*

1. Commercial Mobile Radio Service (47 CFR §20.3, §20.12)

Current roaming rules assume bilateral agreements between facilities-based carriers rather than open markets for capacity.

Recommended Action: The Commission should:

- **Delete §20.12(e) pricing regulations that hinder dynamic wholesale pricing**
- **Modify §20.12(a)(2) to recognize open access networks as distinct from traditional MNOs**

II. COST-BENEFIT CONSIDERATIONS

The elimination of these regulatory barriers would produce substantial economic benefits while reducing costs:

A. *Current Costs of Regulatory Framework*

1. High Entry Barriers: Current regulations effectively prevent meaningful facilities-based entry into the wireless market due to spectrum acquisition costs and network construction requirements. These barriers have led to increased concentration, with the top three carriers now controlling over 95% of the market.
2. Inefficient Spectrum Utilization: Exclusive spectrum licensing creates artificial scarcity. Studies suggest that actual spectrum utilization rates are below 30% on average, meaning valuable spectrum lies fallow most of the time.
3. Reduced Innovation: High entry barriers and exclusive spectrum assignments limit service innovation and particularly harm IoT, M2M, AI and other emerging use cases.

4. Universal Service Inefficiency: Current universal service mechanisms cost billions annually while failing to achieve universal broadband deployment, particularly in rural areas.
5. Infrastructure Underinvestment. The risk of investing is high without being able to measure trends, knowing where pent-up network demand exists (prices add an imperative dimension beyond utilization data), or where innovative use cases might uncover hidden opportunity.

B. *Benefits of Regulatory Deletion*

1. Enhanced Competition: By separating infrastructure provision from service provision, regulatory reforms would dramatically reduce entry barriers. International experiences suggest this could lead to a 20-40% reduction in consumer prices.
2. Improved Spectrum Efficiency: Open access networks with dynamic pricing would increase spectrum utilization from current levels of ~30% to 45-60%, effectively more than doubling utilization without requiring additional spectrum or significant additional infrastructure.
3. Innovation Acceleration: Lowering entry barriers would enable specialized service providers to emerge for industrial IoT, smart cities, telehealth, and other applications, unleashing the power of "permissionless innovation" as with cloud computing.
4. Universal Service Benefits: Competitive procurement of wholesale capacity could reduce the cost of rural coverage by 30-50% based on international case studies, while improving quality of service.
5. Increased Infrastructure Investment. The open access market will unlock additional network demand that is otherwise challenging to identify and measure. New expansion opportunities will encourage investment in our nation's communication infrastructure because network expansion dollars can be cost justified in places where the risk of investing is otherwise too high.

III. TECHNOLOGICAL AND MARKETPLACE CHANGES

Several technological and marketplace developments now make this regulatory reform both feasible and necessary:

1. *AI*: Machine learning models and other types of artificial intelligence will rapidly reshape communications technology, and spectrum stagnation must not impede this.
2. *Advanced Handsets*: Modern devices contain multiple radio frontends that can operate across various frequency bands and technologies, making dynamic spectrum access technically feasible.

3. *Software-Defined Networks*: Network virtualization and software-defined radio technologies now enable dynamic allocation of network resources, eliminating many of the technical barriers that previously justified static spectrum assignments.
4. *Machine-to-Machine and IoT Growth*: The rapid growth of IoT and M2M applications creates demand patterns that are fundamentally different from traditional voice and data services, requiring more flexible access to network resources.
5. *Spectrum Scarcity*: With most usable spectrum already assigned, dynamic sharing and more efficient use of existing spectrum has become essential for continued industry growth.

IV. THE OPEN ACCESS WIRELESS MARKET CONCEPT

The above deregulatory framework would facilitate the adoption of innovative business models and enhance competition in wireless. This includes, but is not limited to, the establishment of an open access market for wireless network capacity. Such a market would substantially increase competition, improve spectrum efficiency and advance universal service goals. This approach addresses multiple policy factors identified in the Commission's Notice, including cost-benefit considerations, experience gained from implementation of existing rules, marketplace and technological changes, easing barriers to entry, and adapting to changes in the broader regulatory environment.

The open access concept, as detailed in the academic literature,[3] represents a proven market design that has been successfully implemented in other network industries, particularly wholesale electricity markets. Importantly, *it would coexist with older models – including exclusive use* – until and unless those license holders decide to utilize the open access market. We believe that encouraging the development of an open access market in wireless would directly further the Commission's statutory goals while eliminating unnecessary regulatory burdens.

The widespread sharing of spectrum assets is needed to efficiently increase spectrum utilization. Open access is a capacity sharing market design in which network capacity cannot be withheld, reducing the scope for exercising market power—market participants price network throughput dynamically via an auction, with only nominal prices paid during uncongested periods. This approach is modeled after successful wholesale electricity markets, which operate on similar principles. An open access wireless market could include the following key elements:

1. *Real-time markets for network capacity with locational marginal pricing as the foundation*

---

[3] *See, e.g., An Open Access Wireless Market Supporting Competition, Public Safety, and Universal Service*, by Peter Cramton and Linda Doyle, April 3, 2016 (https://cramton.umd.edu/papers2015-2019/cramton-doyle-open-access-wireless-market.pdf).

2. *Forward markets (monthly and yearly) to allow stakeholders to hedge and better manage risk*
3. *Independent Market Operator (IMO) that runs the network and conducts auctions*
4. *Non-discriminatory access to network resources for all service providers*
5. *Market monitor to identify problems and suggest improvements*

Again, an open access wireless market would not replace dedicated networks of incumbent carriers but rather would coexist with and complement them. It would create a vibrant wholesale marketplace where Mobile Virtual Network Operators and emerging service providers can obtain network capacity at competitive rates based on actual network conditions, rather than through bilateral wholesale agreements with facilities-based carriers that often reflect market power imbalances.

It is not just the lower cost of market entry that is compelling with open access, it is also the lower cost of market exit. For entrepreneurs and innovators, being able to come to market quickly and cheaply and without having to build substantial infrastructure is critical, but the ability to walk away when it turns out that their innovation may not appeal to customers sufficiently means that the cost of market entry is further massively lower as there is no risk of incurring significant exit costs.

V. POTENTIAL FOR IMPLEMENTATION

An open access approach could be encouraged in any number of ways. The most obvious and in many ways the best course would be for one or more of the incumbent wireless operators to embrace open access for some or all of the capacity on their networks that currently goes unused. As this capacity is effectively wasted, benefiting no one, it would be an easy and essentially costless way for a network operator to improve their economics and optimize the utilization of existing installed capacity. As mentioned above, our modeling demonstrates significant economic advantages to the carriers if they adopt this course.

But the FCC and the federal government broadly have other tools available to encourage the carriers to consider adoption of open access, should the competitive and economic situation continue to deteriorate. These include:

1. *Merger Remedy*: As a condition for future wireless mergers, the Commission could require commitment of capacity to an open access network rather than attempting to maintain a specific number of facilities-based competitors.
2. *Permissionless*: Allow market players to set up an open access network without requiring Commission approval.
3. *Universal Service Reform*: The Commission could direct universal service funding to support open access networks in unserved or underserved areas.

4. *Spectrum Set-Asides*: In future auctions, the Commission could designate portions of new spectrum bands for open access networks, following models in Mexico and Singapore.

CONCLUSION

The Commission is absolutely correct to focus on alleviating unnecessary regulatory burdens. The above regulatory reforms would do just that by permitting the market to innovate beyond current models. By eliminating regulations that limit how spectrum is used, the Commission can unleash new competition and innovation, improve spectrum utilization, and better meet universal service goals.

We urge the Commission to consider these recommendations as part of its review process and would welcome the opportunity to provide additional information or participate in further proceedings on this topic.

Respectfully submitted,

Joseph M. Titlebaum
General Counsel

Kevin S. O'Scannlain
Senior Vice President